

## Claims:

## 1. A method for classifying and selecting records, in which

- records are received, the fields of which contain values,
- 5 - a value contained in at least one specified field is read (1002) from at least one received record,
- the records are selected to classes on the basis of a classification structure, and which is characterized in that
  - at least one read field is identified,
  - 10 - a field-specifically ordered classification structure, corresponding to the identified field is selected (1001),
  - a reference value according to the value contained in the field is searched (1004) from the selected classification structure,
  - at least one class, according to the conditions of the classification structure,
  - 15 corresponding to the reference value is read (1007) from each of the selected classification structures, and
  - the record is selected (1112) to the class read from the field-specifically ordered classification structure.

20 2. A method according to Claim 1, characterized in that

- sets are formed on the basis of the values of the fields, in such a way that a set of classes is formed for each field,
- the service IDs, the condition of the field used in the conditional statement of the class of which is true, are incorporated in the field-specific sets, and
- 25 - the class that appears in all of the sets, i.e. whose conditional statement is entirely true, is selected (1111).

30 3. A method according to Claim 1 or 2, characterized in that the accuracy principle is used to select the class, to which the record is selected, from the classes corresponding to the reference value or reference values, in which case that is selected, from of those corresponding to the reference value or reference values, which has the definition of which the greatest number of classification structure conditions are met.

4. A method according to any of Claims 1 - 3, characterized in that the class to which the record is selected is selected, from the classes corresponding to the reference value or reference values, by applying an intersection or intersections and unions performed using logical operands.

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5. A method according to any of Claims 1 - 4, characterized in that the reference value is searched from a field-specific classification structure, by using a search method that is faster than a sequential search, such as a binary search, a tree search, a hash search, and that the least comparisons are used to find the reference value according to the value contained in the field is found in an ordered structure in the classification structure.

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6. A method according to any of Claims 1 - 5, characterized in that the records received are formed on the basis of the properties of the telecommunications connections.

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7. A method according to any of Claims 1 - 6, characterized in that the fields are fields marked with a field ID.

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8. A method according to any of Claims 1 - 7, characterized in that values in various formats, such as numeric and symbolic values are placed in the fields, and that there are specific classification structures for the various formats, and/or indicators to the classification structures.

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9. A method according to any of Claims 1 - 8, characterized in that the classes to which the records are selected are service classes of billable telecommunications services, or a call, and/or types of telecommunications connections.

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10. A method according to any of Claims 1 - 9, characterized in that the classes, to which the records are selected, are separated on the basis of conditions relating to the properties of telecommunications connections.

11. A method according to any of Claims 1 - 10, characterized in that one field identifier corresponds to a field depicting the duration in time of a billable telecommunications connection and/or a field depicting the volume and/or speed of the

data transmitted over a billable telecommunications connection.

12. A method according to any of Claims 1 - 11, characterized in that the record is a telecommunications network event description record, such as a CDR, ER, IPDR, or

5 UDR.

13. A method according to any of Claims 1 - 12, characterized in that the names of the fields are set to form the entries of the table and for each field at least one operand-specific table according to at least one of the following operands is created, greater than  
10 ( $>$ ), greater than or equal to ( $\geq$ ), less than <, less than or equal to ( $\leq$ ), equal to (=), and not equal to ( $\neq$ ) tables, so that a tree-like field-specific classification structure is created for each specified field.

14. A method according to any of Claims 1 - 13, characterized in that the records  
15 contain several fields and the values contained in at least two specified fields are read  
(1002) from each of the received records, and, for each record,

- a set of suitable classes for each of the read fields, which corresponds to the value read from the field, is searched (1001, 1004, 1007) from the selected classification structures of the classification structure,
- 20 - an intersection set is formed of the sets of suitable classes, and
- the class, to which the record is selected (1112) is selected from the intersection set.

15. A method according to Claim 14, characterized in that the intersection set includes  
25 more than one class and, of these classes, the class with the greatest accuracy is selected, which accuracy is defined on the basis of the number of fields used in the conditional statement of the class.

30 16. A method according to Claim 14, characterized in that the intersection set is an empty set and the class is selected in such a way that a review is made of the statement with next lowest accuracy.

17. A method according to any of Claims 1 - 16, characterized in that it is performed in

a mediator system of a telecommunications network.

18. A classification system for records, which includes a classification system that is arranged

5            - to receive records, the fields of which contain values, and  
              - to select the records to classes

characterized in that

- the classification structure contains a field-specific classification structure according to at least one specified field of the received records,  
10           - logical operands are connected to the field-specific classification structure,  
              - the reference values used in the service-class definition suiting each operand relating to each defined field are arranged to form a separately ordered structure,  
              - classes suiting each reference value are connected to each ordered structure,  
and  
15           - the classification system is set to select, to a set class, the classification of a received record.

19. A classification system according to Claim 18, characterized in that the conditions of the classes are recorded in the classification structure.

20           20. A classification system according to Claim 18 or 19, characterized in that at least one reference value and at least one service ID according to the reference value are recorded in an operand-specific ordered data structure.

25           21. A classification system according to Claim 18 - 20, characterized in that the field-specifically ordered classification system contains a selection structure based on operands and a class division corresponding to the selections according to the structure.

30           22. A classification system according to any of Claims 18 - 21, characterized in that the classification system contains format-specific classification structures, or format-specific indicators to the classification structures.

23. A classification system according to any of Claims 18 - 22, characterized in that the

reference values in the field-specific classification structure are arranged as an ordered structure essentially in order of magnitude.

24. A classification system according to any of Claims 18 - 23, characterized in that the  
5 classification structures are separate, on the basis of the form of the symbol used in the  
classification structure field, such as character-form or numeric.

10 25. A classification system according to any of Claims 18 - 24, characterized in that the  
field identifier is arranged to correspond to the field depicting the data-transfer capacity  
of a billable telecommunications connection.

26. A classification system according to any of Claims 18 - 25, characterized in that the  
reference values are listed in order of magnitude and/or accuracy.

15 27. A classification system according to any of Claims 18 - 26, characterized in that it  
is arranged to search from the classification structure for the service class set for a  
received record, according to the method according to any of Claims 1 - 17.

20 28. A classification system according to any of Claims 18 - 27, characterized in that it  
is arranged to operate in a mediator system of a telecommunications network.

29. A classification system according to any of Claims 18 - 28, characterized in that the  
fields are fields marked using a field identifier.

25 30. A classification system according to any of Claims 18 - 29, characterized in that  
values with different formats, such as numeric and symbolic values, are set in the fields  
and there are specific classifications structures and/or indicators to classification  
structures for the different formats.

30 31. A classification system according to any of Claims 18 - 30, characterized in that at  
least one field identifier corresponds to a field depicting the duration in time of a billable  
telecommunications connection and/or a field depicting the volume and/or rate of data  
transmitted on a billable telecommunications connection.

32. A computer program product for classifying records, characterized in that it is arranged to perform a method according to any of Claims 1 - 17 and that it includes a classification structure according to any of Claims 18 - 31.